Documentation
for
adbinit suite version 1.0
June 19, 2002, revised January 14, 2004

1.0 General Information

1.1 Application Description

The adbinit suite consists of the following scripts and applications:

run_adbinit (bash script)
ingestdef (esql/C)
locatdef (esql/C)
run_load-data (bash script)

This suite is used to initially define the location and ingestfilter tables of the archive database. The run_adbint script executes the two esql/C programs, ingestdef and locatdef. These two applications generate load files. The ingestdef application reads the IHFS database's ingestfilter table. The locatdef application reads the IHFS database's location table and the histdata database's ncdc_td3200_sta table. Once the load files have been reviewed, the run_load-data script utilizes the dbload command to load the data into the archive database's location and ingestfilter tables. All applications take advantage of the apps_defaults system.

1.2 Design Considerations

An integral difference between the location tables of the IHFS database and archive database is that multiple entries for the same location identifier (lid) are allowed for in the archive database so that a history of meta data on a location can be accumulated. To create this history for a lid, the locatdef application utilizes the histdata database.

In order for the most current data to be available in the histdata database's ncdc_td3200_sta table, the latest dataset was obtained from NCDC. The dataset was converted to the necessary format for the histdata database by updating an application provided by OHD/HL.

1.3 Assumptions application makes

i*ngestdef*

To aid the reader who may be unfamiliar with the archive database table definitions, Attachment A contains a cross reference between the IHFS database and archive database

ingestfilter tables.

For the archive database's ingestfilter table the following fields are defined as null: det, obstime, ownag and ownloc.

The value for p (SHEF Probability code) is set to "Z", the new_report field is set to "N" (no) and the active field is set to "Y" (yes) for every location.

locatdef

To aid the reader who may be unfamiliar with the archive database table definitions, Attachment B contains a cross reference between the IHFS database and archive database location tables.

It is assumed that each RFC has the histdata database installed on their awips system. In order for the most current data to be available in the histdata database's ncdc_td3200_sta table, the latest dataset was obtained from NCDC and using a application provided by OHD/HL a new load file was generated. This load file is included along with instructions on how to update the ncdc_td3200_sta table. Thus it is assumed the RFC has loaded the data from this file into the ncdc_td3200_sta table prior to running the run_adbinit script.

For the archive database's location table the following fields are defined as null: goes, huc, zon and dbsource.

For the archive database's name and det fields the standard is for the values to be in mixed case. The program assumes the IHFS database values for name and det are in upper case, thus the program converts the IHFS name and det fields to mixed case. For the archive database's name field the name and detail field (distance and direction) of the IHFS database are concatenated.

For post sites, the sbd value is defined using information from the histdata database for the early entries. For the last entry which uses the current information for the lid that is in the IHFS database the sbd is set as follows: 1) to the sbd value of the IHFS database, if one exists, 2) if sbd does not exist, then it sets it to the value of the lrevise field in the IHFS database, and 3) if neither the sbd or lrevise exists, it defaults to "today's date".

If inadequate data is available to generate a sbd value in the histdata table, the sbd defaults to "07/04/1776".

For the currently active lid entry in the histdata database, the sed is set to the value of sbd defined for the entry for that lid from the IHFS database data. For currently active lid based on the IHFS database data, the sed is set to null.

For no post sites, the sbd is defined in similar manner to a post site and the sed is always set to null.

In the archive database the longitude is stored with a negative sign.

In the archive database the elevation is stored as an integer instead of a float. If no elevation is available the value defaults to zero.

For sites where the state code in the IHFS database is “XX”, the application looks at the lid to see if the code can be determined by the last 2 characters of the NWSLI lid. If no state is still defined then the application looks at the first two digits of the COOP station number if one exists to determine the state code.

If the county name is unavailable in the IHFS database, then the countyfips code field defaults to “XXX” for the archive database...

For sites where the post flag is set to “1" in the IHFS database location table, the post field in the archive database is set to “2".

It is assumed that the IHFS database’s rfc table contains the 5 character acronyms for the offices; for example ABRFC, APRFC. For the archive database the first two letters of this entry are used in the rfc field of the archive database’s location table.

For the country field, the value is initialized to “US” but the code using the state field to determine if any locations are in Canadian provinces or Mexican states based on the 2-char abbreviations the author has run by the field. (See table 1). If its determined it a location in a Canadian province the country field is set to “CA” and for Mexico the country field is set to “MX”.

2.0 Configuration Information

2.1 Apps_defaults tokens

Four apps_defaults tokens are used by the various programs and scripts, these are:

db_name	name of the IHFS database on ds1
server_name	Informix server name on ds1
hdb_db_name	name of the historical database on ds1
adb_name	name of the archive database on the archive system

The tokens db_name and server_name are used by both the ingestdef and locatdef programs. The token hdb_db_name is used by the locatdef program. The token adb_name is used by the run_load-data script.

2.2 Histdb

The user has the option to update the histdata database's ncdc_td3200_sta table (neither the NCDC SAO station history nor the daily and hourly inventories are updated). Located in the /rfc_arc/bin/adbinit/hdb directory of the archive system are the files necessary for this update. Steps for updating the ncdc_td3200_sta table are as follows:

- ❏ on awips ds1 using dbaccess unload the data from the ncdc_td3200_sta table
- ❏ still on awips ds1, drop the ncdc_td3200_sta table
- ❏ on archive system and cd to /rfc_arc/bin/adbinit/hdb directory and run the script run_table. This script should create a empty ncdc_td3200_sta table in the histdata database on the ds1 system
- ❏ after the table has been recreated, run the dbload_stn script in the same directory
- ❏ review the error output file MIDNIGHT.err, if this file is zero in size then all the data loaded with no problems

If the user's office does not have a histdata database on the awips ds1 system, but still wishes to take advantage of the histdata information for the archive database, the user can temporarily create a histdata database with just this one table on the ds1 system.

3.0 User How-To (if its GUI, show images)

Initializing the location and ingestfilter tables of the archive database is as easy as one, two, three, etc. The steps are as follows:

- ❏ login in as oper on the archive system
- ❏ cd to /rfc_arc/bin/adbinit
- ❏ execute the run_adbinit script (this will run both the ingestdef and locatdef programs)
- ❏ review the output files ingest.unl and locat.unl (optional)
- ❏ execute the run_load-data script (this will load the data into the two tables)
- ❏ review the error output file MIDNIGHT.err, if this file is zero in size then all the data loaded with no problems
- ❏ you are now ready to start posting data to the archive database via its shefdecoder.

Note that if the user has no historical database, then the locatdef program will skip thru that part of the code and process stations based on the IHFS database only.

4.0 Troubleshooting Information

The two applications, ingestdef and locatdef have a simple debug option. To turn debug option on, the user must edit the run_adbinit script and add an argument after the program name.... ingestdef Y > debug1.out and/or locatdef Y > debug2.out. If the application runs successfully the output written to screen can be quite lengthy, so it is recommended the user redirect the output into a file as shown above. The important part of this debug

information is generally the lines related to database name and sql code values when the programs are not finding data. Excerpts from a successful runs with the debug option turned on are shown in sections 4.1 and 4.2 for each program.

4.1 Sample output for ingestdef

```
hd5_12krf@ONLINE
sqlca.sqlcode open database 0
sqlca.sqlcode select 0
sqlca.sqlcode open cursor 0
ACVW4   |S|F|I|   0|R|Z|Z|Z|1||1|N|Y|0||||0|
ACVW4   |S|W|I|   0|R|Z|Z|Z|1||1|N|Y|0||||0|
ACVW4   |T|A|I|   0|R|Z|N|Z|1||1|N|Y|1||||0|
ACVW4   |T|A|I|   0|R|Z|X|Z|1||1|N|Y|1||||0|
ACVW4   |T|A|I|   0|R|Z|Z|Z|1||1|N|Y|0||||0|

etc.

ZVFK1   |P|P|P|5004|R|Z|Z|Z|1||1|N|Y|1||||0|
ZVHK1   |P|P|D|2001|R|Z|Z|Z|1||1|N|Y|1||||0|
ZVHK1   |P|P|P|5004|R|Z|Z|Z|1||1|N|Y|1||||0|
sqlca.sqlcode fetch cursor 100
sqlca.sqlcode close cursor 0

ingestdef finished
```

4.2 Sample output for locatdef

```
histdata@ONLINE
sqlca.sqlcode open database 0
sqlca.sqlcode select 0
sqlca.sqlcode open cursor 0
Pratt
----- 146548 Pratt 12/15/1994 05/19/1995 37.38 -98.43 0
Ogallala 1 S
00GN1 256205 Ogallala 1 S 04/01/1986 09/29/1987 41.07 -101.43
3147
Ogallala 1 S

etc.

sqlca.sqlcode fetch cursor 100
sqlca.sqlcode close cursor 0
sqlca.sqlcode free cursor 0
sqlca.sqlcode close histdb 0
today is 06/06/2002   6 6 2
hd5_12krf@ONLINE
sqlca.sqlcode open IHFS database 0
sqlca.sqlcode select 0
```

```
sqlca.sqlcode open cursor 0
ALVO2      **  000
Alcova 17 NW

ALVW4      **  07/04/1776
Alexander

Alexandria 3 S

ALXN1      **  07/04/1776
Alexandria

ALXS2      **  07/04/1776
Alley Springs Mo
JACKS FORK R                              Jacks Fork R

etc.

sqlca.sqlcode fetch cursor 100
sqlca.sqlcode close cursor 0
sqlca.sqlcode free cursor 0
sqlca.sqlcode close IHFS database 0

locatdef finished
```

5.0 Installation Instructions

"Under Construction"

6.0 Maintenance Information

Originating Programmer/Office: Meyer, A. Juliann
Missouri Basin River Forecast Center
Pleasant Hill MO

Maintenance programmer/Office: Meyer, A. Juliann
Missouri Basin River Forecast Center
Pleasant Hill MO

7.0 References

data dictionary for archive database

data dictionary for the IHFS database version 5.1.2

Attachment A

archive database ingestfilter table column datatype	IHFS database ingestfilter table column datatype	Description
lid char(8)	lid char(8)	location identifier
pe1 char(1) pe2 char(1)	pe char(2)	SHEF Physical Element codes
dur char(1)		SHEF Duration code
idur integer	dur smallint	numeric value of SHEF Duration code
t char(1) s char(1)	ts char(2)	SHEF Type-Source codes
e char(1)	extremum char(1)	SHEF Extremum code
p char(1)		SHEF Probability code
ts_rank smallint	ts_rank smallint	numerical ranking of alternate SHEF TS codes for the same location and parameter.
det char(40)		descriptive detail
ingest char(1)	ingest char(1)	post data to database, archive db 0 - no & 1 - yes ihfs_db F - no & T - yes
new_report char(1)		new entry? Y or N
active char(1)		active sensor? Y or N
ofs_input char(1)	ofs_input char(1)	feed data to OFS, archive db 0 - no & 1 - yes ihfs_db F - no & T - yes
obstime integer		nominal obs time for monthly data
ownag char(6)		owner agency
ownloc char(3)		owner agency location
mpe_input char(1)	stg2_input char(1)	feed data to stageII/AreaWide archive db 0 - no & 1 - yes ihfs_db F - no & T - yes
primary key lid, pe1, pe2, dur, idur, t, s, e, p	primary key lid, pe, dur, ts, extremum	

Attachment B

archive database location table column datatype	IHFS database location table column datatype	Description
lid char(8)	lid char(8)	location identifier
sbd date	sbd or lrevise date	begin date (mm/dd/ccyy)
sed date		end date (mm/dd/ccyy)
goes char(8)		dcp platform id
name char(60)	name char(50)	station name archive db - city name with distance and direction ihfs_db - name is city name with no state, distance or direction
det char(40)	det char(30)	additional station description information
lat float	lat float	latitude
lon float	lon float	longitude
elev integer	elev float	elevation in ft msl
state char(2)	state char(2)	2-char PO state code
huc char(8)	hu char(8)	hydrologic unit code
countyfips char(3)		county fips code
zon char(4)		NWS zone code
hsa char(3)	hsa char(3)	hydrologic service area WFO identifier
wfo char(3)	wfo char(3)	WFO identifier
post integer	post integer	post flag
dbsource char(3)		
rfc char(2)	rfc char(5)	RFC acronym (ex. MB instead of MBRFC)
countryfips char(2)		country fips code (ex. US for United States)
primary key lid, sbd	primary key lid	